

Water Power

Fuel of the Future Today

Our previous two issues described an invention which shows it's possible to make power economically - from water. If used for transportation and energy generation, engineer Yull Brown's technology can change the nature of the world's atmosphere, environment and power structures in a remarkably short time.

Brown's gas is a *stable* mix of hydrogen and oxygen which burns at very high temperatures but can be completely and easily controlled. Some of its more interesting properties are outlined in previous issues; it's produced within a cell using *only water and electricity*. Yull Brown's company B.E.S.T. Australia Ltd moved into production in June and are producing and selling welding units which include a Brown's gas generator from a Sydney factory. Like many true innovations, the trail from drawing board to actuality has been a tortured one. This fuel of the future has had as least as much difficulty coming to fruition as electric power did in the days of Edison and Tesla.

Mr Brown graduated in electronic engineering in Bulgaria before working in Russia, where he spent seven years in forced labour and prison camps with the outbreak of WWII. Reaching Australia in 1952, he worked as a lab technician and designed and built test instruments and quality control equipment. He credits Jules Verne's *Mysterious Island* as the novel which turned him to water-fuel research.

Alvin R. Crosby of Auckland, New Zealand developed what he claims to be a similar system derived from Brown's ideas which he has since sold internationally.

In 1982 Alvin Crosby bought NZ manufacturing license from Yull Brown for three years in an attempt to "quickly bring his H_2 plus O_2 gas system to the New Zealand public". He claims to have redesigned the control cell, taking the gas generator beyond Yull Brown's patent and subsequently reported that the entire system was apparently based on patents taken out by the Hanes Corporation of Phoenix, Nevada USA in 1966 and 1967 (Patents 3,262,872 [1966] and 3,310,483

[1967]). Mr Crosby claims to have used the gas in the 1970s prior to meeting Yull Brown, to run a lawnmower. Brown's gas can also be used for cooking, heating, cutting and welding

Crossing the Tasman

B.E.S.T. AUSTRALIA HAS SUPPLIED *NEXUS* WITH DOCUMENTATION which proves that they *do* hold two patents for the production of Brown's gas in Australia and NZ, one for the cell and one for the safety device (control cell). Mr Crosby was granted NZ licensing rights to produce Brown's welder/generators in March, 1982. Yull Brown holds patents on his system in 31 countries, including the USSR and USA.

" H_2 plus O_2 gas is produced from more than 50 different machines made around the world, for jewellery soldering," according to Mr Crosby.

"I developed new technology totally departing from anything Brown had put together. My designs incorporated machines producing 2-4 times the output of Mr Brown's machines. I designed 100, 200, 600, 2,000, 5,000 and 10,000 litre per hour machines and I spent \$NZ1.6 million doing it."



Mr Brown ... his gas burns a hole through a house brick — Picture: ALAN PRYKE

"If we went into the automotive area it would make too many waves. And I'm not prepared to take that risk. The whole subject is very political." - A. Crosby

According to Mr Crosby his system produced gas which burned at 2,950 degrees Celsius (measured with a disappearing filament pyrometer), not 6,000 degrees as claimed for Brown's gas. BEST Australia points out that they can vapourise tungsten with their welder - certainly at a higher temperature than 2,950°C.

Crosby cites a figure of 126% efficiency in producing the

gas, using the latent heat in water molecules to provide an additional 26% in energy return. To convert enough water directly to gas in a travelling vehicle you'd need an efficiency of 200%, however, or the car would soon run out of steam.

"You can run a car on water and it runs very well. But not continuously," Mr Crosby said in 1983.

"If we went into the automotive area it would make too many waves. And I'm not prepared to take that risk. The whole subject is very political."

Difficulties in using Brown's gas as a fuel can be overcome; according to Mr Crosby it can be compressed up to 2,000 lb p.s.i., making it possible to carry enough fuel aboard a vehicle. Yull Brown has stated that conventional LPG bottles can be used for storage.

"There is tremendous potential for water powered vehicles and they are the quickest way to halt the greenhouse effect," Mr Crosby told *NEXUS* earlier this year.

"All the engines are out there now - we don't need to build new technologies. Automotive engines are ideally suited to direct conversion. The optimum, of course, would be to produce the gas directly as you drive, but that isn't presently possible. But there are a number of ways in which it can be used. The gas can be bubbled through and added to petrol, for instance, greatly increasing fuel efficiency.

"But the technology for this conversion is fast disappearing as new models of vehicles are doing away with carburettors in favour of fuel injection. This may have been foreseen by technologists."

Unfortunately, these generators have also generated much legal action between BEST Australia and Hydrox over patent and licensing infringement.

Alvin Crosby claimed his use of high quality nickel electrodes and efficiency of design made his the superior generating system. BEST refuted this. After two offers to shut up shop, in 1986 Crosby sold his interests to Hydrox International Corporation (formed from the assets of Crosby Energy Systems) and subsequently sold all rights and patents to Peers and Company Merchant Bank of Wall Street - after his three-year contract with Yull Brown had expired. Manufactured in Manila, the Philippine capital, these generators were made available through Sydney-based Aquagas Australia Ltd and Fletcher Steel in New Zealand as welding units. According to Hydrox chief executive David Williamson, the Manila production team has disbanded. But the technology is used by at least eight other companies - apparently in breach of patent.

Hydrox and Aquagas were taken to court by Brown's Water Fuel Holdings in early 1988 to prevent them selling the Hydrox generator/welder in Australia. In February of that year a former Crosby and Hydrox employee was apprehended at Auckland Airport and charged with attempting to take '\$2.87 million worth' of research papers and circuit boards out of the country. In New Zealand's first industrial espionage trial, Mr Williams pressed charges against his electronics engineer Kenneth Moreau, who admitted his attempt to smuggle the materials into Korea to a subsidiary company. Hydrox has listed subsidiary companies in Korea, the US, Hong Kong and Australia.

Accusations and court action have flown thick and fast between many of the parties concerned, and Hydrox was wound up by High Court order in Auckland last March by the request of creditors who were owed \$NZ200,000.

Yull Brown has discovered that a patent is only any use if you are prepared to defend it in court at great cost in time and money. Now that BEST Australia is in production, we can only hope the system will also be developed for uses other than welding. Yull Brown is also developing plans for an emission-free waste disposal unit and a pump which works on atmospheric pressure differential and has no moving parts. Desalination units are also on the drawing board.

Hydrogen Hope

THE USE OF HYDROGEN AS A FUEL FOR VEHICLES HAS OFTEN BEEN CONSIDERED our best chance for stopping industry's fossil fuel fix. Now it's also seen as a solution to the Greenhouse Effect and climatic disaster. Hydrogen is literally the most plentiful element in the universe and burns more cleanly (although it still produces dangerous nitric oxides), producing more energy per kilogram and better engine wear than fossil fuels. However, Brown's gas burnt without air produces only charged water vapour as waste.

Tests by *Electronics Australia* magazine found that a regular internal combustion engine needs little modification to accept Brown's oxygen-hydrogen mix. The carburettor is simply replaced with a throttle valve and pressure reducer while the engine is re-timed to handle the gas' higher flame speed. *Electronics Australia* researchers found that engines have an output about 8% higher than with a petrol/air mix.

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